

## **Detailed Data Tables: Men Who Have Sex with Men (MSM)**

### **Recent changes to the presentation of Massachusetts HIV/AIDS surveillance data**

Effective January 1, 2011, the Massachusetts Department of Public Health (MDPH), Bureau of Infectious Disease, HIV/AIDS fact sheets, epidemiologic reports and other HIV data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts. As of January 1, 2015, this resulted in the removal of 4,401 HIV/AIDS cases, of which 1,021 have died and 3,380 were living. These persons living with HIV/AIDS may still continue to reside and receive care in the Commonwealth. The total number of persons living with HIV/AIDS, irrespective of location at diagnosis, is the basis for MDPH service planning. Please note that previous HIV/AIDS fact sheets, data reports and presentations included cases that may have been first diagnosed in another state.

Also effective January 1, 2011, the MDPH HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to eliminate the presumed heterosexual risk category for men; those cases have been reassigned to the no identified risk (NIR) category. The presumed heterosexual risk category was used with the intention of identifying HIV risk for women when sex with men is the only reported risk factor, there is no evidence of current or past injection drug use (IDU), and behavioral risk and HIV status information about male sexual partners are unknown. The application of the presumed heterosexual risk category to men is overly inclusive in that woman to man HIV transmission is biologically less probable, and there are alternate risks that are possible for men, including sex with other men (MSM) or IDU. The CDC reports men diagnosed with HIV/AIDS who report sex with women as their only risk factor, without corresponding partner risk or HIV status information, in the NIR category. This revision to report presumed heterosexual male HIV/AIDS cases as NIR will bring Massachusetts HIV/AIDS case reporting for men in alignment with CDC standards. The MDPH will maintain presumed heterosexual and heterosexual risk categories for women.

## Explanation of Estimated Rates for MSM and non-MSM

**Estimated MSM Prevalence Rate:** An estimate of the proportion of MSM that are currently living with HIV/AIDS. The numerator is the number of MSM (including MSM/IDU) who are living with HIV/AIDS, ages 18 to 64, as of a specific date and the denominator is the estimated size of the MSM population. The size of the MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting same-sex partner (or opposite and same-sex partner), on the 2012 and 2013 Massachusetts BRFSS (4.4%), by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 90,851. The prevalence rate in MSM is calculated by the formula:

$$\begin{aligned}\text{HIV/AIDS prevalence rate for MSM as of 1/1/15} &= (\text{number of MSM living with HIV/AIDS, ages 18-64, on 1/1/15} \div \text{estimated population size of MSM}) \times 100,000 \\ &= ((7,435 / (.044 \times 2,064,804)) \times 100,000 \\ &= (7,435 / 90,851) \times 100,000 \\ &= 0.08183696 \\ &= \mathbf{8,183.7 \text{ per } 100,000}\end{aligned}$$

**Estimated non-MSM Prevalence Rate:** An estimate of the proportion of non-MSM that are currently living with HIV/AIDS used as a basis of comparison to the MSM prevalence rate. The numerator is the number of non-MSM, ages 18 to 64, who are living with HIV/AIDS as of a specific date and the denominator is the estimated size of the non-MSM population. The size of the non-MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting sex with only women, on the 2012 and 2013 Massachusetts BRFSS (95.6%) by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 1,973,953. The prevalence rate in non-MSM is calculated by the formula:

$$\begin{aligned}\text{HIV/AIDS prevalence rate for non-MSM as of 1/1/15} &= (\text{number of non-MSM living with HIV/AIDS, ages 18-64 on 1/1/15} \div \text{estimated population size of non-MSM}) \times 100,000 \\ &= ((5,332 / (.956 \times 2,064,804)) \times 100,000 \\ &= (5,332 / 1,973,953) \times 100,000 \\ &= 0.00270118 \times 100,000 \\ &= \mathbf{270.1 \text{ per } 100,000}\end{aligned}$$

**Estimated Average Annual MSM HIV Diagnosis Rate:** An estimate of the average proportion of MSM that are diagnosed with HIV infection over a three-year period. The numerator is the average number of MSM (including MSM/IDU) who were diagnosed with HIV infection over the three-year period and the denominator is the estimated size of the MSM population. The size of the MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting same-sex partner (or opposite and same-sex partner), on the 2012 and 2013 Massachusetts BRFSS (4.4%), by the number of 18 to 64 year old men in

Massachusetts as reported in the 2010 Census (2,064,804), to get 90,851. The estimated HIV diagnosis rate in MSM is calculated by the formula:

Average annual HIV diagnosis rate among MSM, 2011–2013	$  \begin{aligned}  &(((\text{number of MSM diagnosed with HIV infection in 2010} + \\  &\text{number of MSM diagnosed with HIV infection in 2011} + \\  &\text{number of MSM diagnosed with HIV infection in 2012}) \div 3) \\  &\div \text{estimated population size of MSM}) \times 100,000 \\  &= ((959 \div 3) / (.044 \times 2,064,804)) \times 100,000 \\  &= (319.67 / 90,851) \times 100,000 \\  &= 0.00351857 \times 100,000 \\  &= \mathbf{351.9 \text{ per } 100,000}  \end{aligned}  $
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**Estimated Average Annual non-MSM HIV Diagnosis Rate:** An estimate of the average proportion of non-MSM that are diagnosed with HIV infection over a three-year period used as a basis of comparison to the MSM diagnosis rate. The numerator is the average number of non-MSM who were diagnosed with HIV infection over the three-year period and the denominator is the estimated size of the non-MSM population. The size of the non-MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting sex with only women, on the 2012 and 2013 Massachusetts BRFSS (95.6%) by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 1,973,953. The estimated HIV diagnosis rate in non-MSM is calculated by the formula:

Average annual HIV diagnosis rate among non- MSM, 2011–2013	$  \begin{aligned}  &(((\text{number of non-MSM diagnosed with HIV infection in} \\  &\text{2011} + \text{number of non-MSM diagnosed with HIV infection} \\  &\text{in 2012} + \text{number of non-MSM diagnosed with HIV} \\  &\text{infection in 2013}) \div 3) \div \text{estimated population size of non-} \\  &\text{MSM}) \times 100,000 \\  &= ((549 \div 3) / (.956 \times 2,064,804)) \times 100,000 \\  &= (183 / 1,973,953) \times 100,000 \\  &= 0.00009271 \times 100,000 \\  &= \mathbf{9.3 \text{ per } 100,000}  \end{aligned}  $
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**Table 1. Men diagnosed with HIV infection by reported risk and year of diagnosis: Massachusetts<sup>1</sup>, 2004–2013<sup>2</sup>**

	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined <sup>3</sup>		Total <sup>4</sup>
	N	%	N	%	N	%	N	%	N	%	N
2004	292	45%	100	15%	26	4%	50	8%	173	27%	<b>646</b>
2005	349	53%	90	14%	23	3%	36	5%	160	24%	<b>658</b>
2006	344	58%	50	8%	18	3%	42	7%	135	23%	<b>592</b>
2007	295	55%	58	11%	22	4%	27	5%	132	25%	<b>535</b>
2008	291	54%	45	8%	29	5%	29	5%	140	26%	<b>541</b>
2009	317	58%	34	6%	18	3%	27	5%	145	27%	<b>542</b>
2010	296	59%	44	9%	23	5%	29	6%	106	21%	<b>501</b>
2011	276	55%	41	8%	19	4%	25	5%	137	27%	<b>499</b>
2012	320	61%	25	5%	22	4%	31	6%	120	23%	<b>521</b>
2013	321	60%	29	5%	15	3%	16	3%	150	28%	<b>533</b>

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available 10 year period after the implementation of HIV infection reporting in 1999.

<sup>3</sup> Includes men sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

<sup>4</sup> Totals include pediatric and blood/blood products reported risks.

MSM = Male-to-Male Sex; IDU = Injection Drug Use; HTSX = Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/15

**Table 2. People diagnosed with HIV infection by gender and reported risk: Massachusetts<sup>1</sup>, 2011–2013<sup>2</sup>**

	Men		Women		State Total	
Reported risk:	N	%	N	%	N	%
Male-to-male sex (MSM)	917	59%	N/A	N/A	917	44%
Injection drug use (IDU)	95	6%	59	11%	154	7%
MSM/IDU	56	4%	N/A	N/A	56	3%
Heterosexual sex	72	5%	128	23%	200	10%
Other	6	<1%	4	1%	10	<1%
Total undetermined/other	407	26%	360	65%	767	36%
- Pres. HTSX <sup>3</sup>	N/A	N/A	275	50%	275	13%
- Undetermined <sup>4</sup>	407	26%	85	15%	492	23%
<b>Total</b>	<b>1,553</b>	<b>100%</b>	<b>551</b>	<b>100%</b>	<b>2,104</b>	<b>100%</b>

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Reflects year of HIV diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

<sup>3</sup> Includes woman sex with men of unknown HIV status or risk. This category is limited to women.

<sup>4</sup> Includes man sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

Pres. HTSX = Presumed Heterosexual Sex; N/A = Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/15

*Note: The category of “presumed heterosexual” is used in Massachusetts to re-assign women who are reported with a risk of heterosexual sex, but only with a partner of unknown HIV status or behavioral risk. Massachusetts uses the category of presumed heterosexual to distinguish these women from other undetermined cases about which we know less. Prior to January 1, 2011, the presumed heterosexual category was also used to report HIV data in men. The rationale for the application of the presumed heterosexual reported risk category to women only has been addressed in the MDPH OHA report “Intersecting Risks: HIV Infection among Heterosexual Women and Men in Massachusetts.” (2010)*

*[http://www.mass.gov/Eeohhs2/docs/dph/aids/intersecting\\_risks.pdf](http://www.mass.gov/Eeohhs2/docs/dph/aids/intersecting_risks.pdf). Nationally, the Centers for Disease Control and Prevention categorize “presumed heterosexual” cases as “no identified risk” (NIR). As such, comparisons of the presumed heterosexual category cannot be made to national data. Caution should be used in interpreting data for presumed heterosexual, as it is still not clear what the risk was for women in this category. Although a person may not report other risk behaviors, such as injection drug use to a health care provider, it does not exclude the possibility that an individual has experienced these other risks. There are many barriers to disclosing HIV risk behaviors in the health care setting such as a limited patient-provider relationship or stigma.*

**Table 3. People living with HIV/AIDS on December 31, 2014 by gender and reported risk: Massachusetts<sup>1</sup>**

	Men		Women		Total	
Reported risk:	N	%	N	%	N	%
Male-to-male sex (MSM)	7,450	53%	N/A	N/A	7,450	38%
Injection drug use (IDU)	2,392	17%	1,241	22%	3,633	18%
MSM/IDU	677	5%	N/A	N/A	677	3%
Heterosexual sex	823	6%	1,945	34%	2,768	14%
Other	224	2%	182	3%	406	2%
Total undetermined/other	2,532	18%	2,271	40%	4,803	24%
• Pres. HTSX <sup>2</sup>	N/A	N/A	1,813	32%	1,813	9%
• Undetermined <sup>3</sup>	2,532	18%	458	8%	2,990	15%
<b>Total</b>	<b>14,098</b>	<b>100%</b>	<b>5,639</b>	<b>100%</b>	<b>19,737</b>	<b>100%</b>

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Includes woman sex with men of unknown HIV status or risk. This category is limited to women.

<sup>3</sup> Includes man sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

N/A=Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/15

**Table 4. Men diagnosed with HIV infection by reported risk and race/ethnicity: Massachusetts<sup>1</sup>, 2011–2013<sup>2</sup>**

Race/ Ethnicity:	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined <sup>2</sup>	
	N	%	N	%	N	%	N	%	N	%
White (NH)	512	56%	27	28%	45	80%	11	15%	84	21%
Black (NH)	128	14%	18	19%	3	5%	34	47%	180	44%
Hispanic/Latino	224	24%	48	51%	7	13%	26	36%	126	31%
API	38	4%	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>
Other/Und.	15	2%	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>
<b>Total</b>	<b>917</b>	<b>100%</b>	<b>95</b>	<b>100%</b>	<b>56</b>	<b>100%</b>	<b>72</b>	<b>100%</b>	<b>407</b>	<b>100%</b>

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

<sup>3</sup> Includes men sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

<sup>4</sup> Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

(NH) = Non-Hispanic, API = Asian/Pacific Islander, Und. = Undetermined

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/15

**Table 5. Men living with HIV/AIDS on December 31, 2014 by reported risk and race/ethnicity: Massachusetts<sup>1</sup>**

Race/ Ethnicity:	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined <sup>2</sup>	
	N	%	N	%	N	%	N	%	N	%
White (NH)	5,076	68%	731	31%	427	63%	152	18%	631	25%
Black (NH)	984	13%	576	24%	109	16%	379	46%	1,170	46%
Hispanic/Latino	1,161	16%	1,057	44%	130	19%	275	33%	640	25%
API	167	2%	15	1%	-- <sup>3</sup>	-- <sup>3</sup>	-- <sup>3</sup>	-- <sup>3</sup>	79	3%
Other/Und.	62	1%	13	1%	-- <sup>3</sup>	-- <sup>3</sup>	-- <sup>3</sup>	-- <sup>3</sup>	12	<1%
<b>Total</b>	<b>7,450</b>	<b>100%</b>	<b>2,392</b>	<b>100%</b>	<b>677</b>	<b>100%</b>	<b>823</b>	<b>100%</b>	<b>2,532</b>	<b>100%</b>

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Includes man sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

<sup>3</sup> Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

(NH) = Non-Hispanic, API = Asian/Pacific Islander, Und. = Undetermined

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/15

**Table 6. Men diagnosed with HIV infection by reported risk and place of birth: Massachusetts<sup>1, 2011–2013<sup>2</sup></sup>**

	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined <sup>3</sup>	
	N	%	N	%	N	%	N	%	N	%
United States	672	73%	59	62%	46	82%	30	42%	190	47%
PR/US Depen. <sup>4</sup>	41	4%	-- <sup>5</sup>	-- <sup>5</sup>	5	9%	10	14%	22	5%
Non-US	204	22%	-- <sup>5</sup>	-- <sup>5</sup>	5	9%	32	44%	195	48%
<b>Total</b>	<b>917</b>	<b>100%</b>	<b>95</b>	<b>100%</b>	<b>56</b>	<b>100%</b>	<b>72</b>	<b>100%</b>	<b>407</b>	<b>100%</b>

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

<sup>3</sup> Includes man sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

<sup>4</sup> Ninety-eight percent of people diagnosed with HIV infection from 2011–2013 who were born in a US dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, 1% were born in Guam and 1% were born in an unknown dependency.

<sup>5</sup> Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/15



**Table 7. Men living with HIV/AIDS on December 31, 2014 by reported risk and place of birth: Massachusetts<sup>1</sup>**

	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined <sup>3</sup>	
	N	%	N	%	N	%	N	%	N	%
United States	6,096	82%	1,560	65%	563	83%	360	44%	1,105	44%
PR/US Depen. <sup>4</sup>	232	3%	719	30%	68	10%	115	14%	168	7%
Non-US	1,122	15%	113	5%	46	7%	348	42%	1,259	50%
<b>Total</b>	<b>7,450</b>	<b>100%</b>	<b>2,392</b>	<b>100%</b>	<b>677</b>	<b>100%</b>	<b>823</b>	<b>100%</b>	<b>2,532</b>	<b>100%</b>

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Includes man sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

<sup>3</sup> Ninety-eight percent of people living with HIV/AIDS who were born in a US Dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, <1% were born in Guam and 2% were born in an unknown dependency.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/15

**Table 8. MSM<sup>1</sup> diagnosed with HIV infection by race/ethnicity and place of birth: Massachusetts<sup>2</sup>, 2011–2013**

Place of Birth	White Non-Hispanic		Black Non-Hispanic		Hispanic/Latino	
	N	%	N	%	N	%
United States	462	90%	96	75%	91	41%
PR/US Depen. <sup>3</sup>	0	0%	0	0%	41	18%
Non-US	50	10%	32	25%	92	41%
<b>Total</b>	<b>512</b>	<b>100%</b>	<b>128</b>	<b>100%</b>	<b>224</b>	<b>100%</b>

<sup>1</sup> Includes primary reported risk as male-to-male sex (MSM)

<sup>2</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>3</sup> PR/US Depen. = Puerto Rico/US Dependency; 98% of people diagnosed with HIV infection from 2011–2013 who were born in a US dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, 1% were born in Guam and 1% were born in an unknown dependency.

<sup>4</sup> Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/15

**Table 9. MSM<sup>1</sup> living with HIV/AIDS on December 31, 2014 by race/ethnicity and place of birth: Massachusetts<sup>2</sup>**

	White Non-Hispanic		Black Non-Hispanic		Hispanic/Latino	
<b>MSM</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
US	4,751	94%	814	83%	427	37%
PR/US Depen. <sup>3</sup>	5	0%	-- <sup>4</sup>	-- <sup>4</sup>	223	19%
Non-US	320	6%	-- <sup>4</sup>	-- <sup>4</sup>	511	44%
<b>Total</b>	<b>5,076</b>	<b>100%</b>	<b>984</b>	<b>100%</b>	<b>1,161</b>	<b>100%</b>

<sup>1</sup> Includes primary reported risk as male-to-male sex (MSM)

<sup>2</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>3</sup> PR/US Depen. = Puerto Rico/US Dependency; 98% of people living with HIV/AIDS who were born in a US Dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, <1% were born in Guam, and 2% were born in an unknown dependency.

<sup>4</sup> Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/15

**Table 10. Men diagnosed with HIV infection by race/ethnicity, age at HIV diagnosis and reported risk: Massachusetts, 2011–2013<sup>2</sup>**

	White NH				Black NH				Hispanic/Latino				Total <sup>1</sup>			
Age in yrs.	13–24		25+		13–24		25+		13–24		25+		13–24		25+	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
MSM	73	84%	439	74%	43	74%	85	28%	45	71%	179	49%	173	79%	744	56%
IDU	-- <sup>4</sup>	2%	25	4%	0	0%	18	6%	0	0%	48	13%	-- <sup>4</sup>	-- <sup>4</sup>	93	7%
MSM/IDU	9	10%	36	6%	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	6	2%	12	5%	44	3%
HTSX	0	0%	11	2%	-- <sup>4</sup>	-- <sup>4</sup>	33	11%	-- <sup>4</sup>	-- <sup>4</sup>	25	7%	-- <sup>4</sup>	-- <sup>4</sup>	70	5%
Other	0	0%	0	0%	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	-- <sup>4</sup>	0	0%	-- <sup>4</sup>	-- <sup>4</sup>	0	0%
Undetermined <sup>3</sup>	-- <sup>4</sup>	3%	81	14%	10	17%	170	55%	15	24%	111	30%	28	13%	379	28%
<b>Total</b>	<b>87</b>	<b>100%</b>	<b>592</b>	<b>100%</b>	<b>58</b>	<b>100%</b>	<b>307</b>	<b>100%</b>	<b>63</b>	<b>100%</b>	<b>369</b>	<b>100%</b>	<b>220</b>	<b>100%</b>	<b>1,330</b>	<b>100%</b>

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

<sup>3</sup> Includes men sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

<sup>4</sup> Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

MSM = Male-to-Male Sex; IDU = Injection Drug Use; MSM/IDU = Male-to-Male Sex and Injection Drug Use; HTSX = Heterosexual Sex;

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/15

**Table 11. Men diagnosed with HIV infection by reported risk and age at HIV diagnosis: Massachusetts<sup>1</sup>, 2011–2013<sup>2</sup>**

Age (years):	MSM		Non-MSM	
	N	%	N	%
Under 13	0	0%	3	<1%
13 to 19	30	3%	6	1%
20 to 24	143	16%	41	6%
25 to 29	159	17%	57	9%
30 to 34	123	13%	71	11%
35 to 39	91	10%	72	11%
40 to 44	113	12%	100	16%
45 to 49	125	14%	105	17%
50 to 54	72	8%	76	12%
55 to 59	35	4%	60	9%
60+	26	3%	45	7%
<b>Total</b>	<b>917</b>	<b>100%</b>	<b>636</b>	<b>100%</b>

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/15

**Table 12. Percentage distribution of people diagnosed with HIV infection by Health Service Region (HSR)<sup>1</sup> and reported risk: Massachusetts<sup>2</sup>, 2011–2013<sup>3</sup>**

	MSM	IDU	MSM/ IDU	HTSX	Other	Pres. HTSX <sup>4</sup>	Undet. <sup>5</sup>	Total
HSR	%	%	%	%	%	%	%	N
Boston	51%	6%	3%	9%	<1%	11%	21%	<b>633</b>
Central	37%	10%	2%	12%	1%	18%	19%	<b>165</b>
Metro West	47%	3%	2%	7%	1%	14%	26%	<b>323</b>
Northeast	39%	7%	3%	12%	1%	13%	26%	<b>392</b>
Southeast	43%	6%	4%	8%	<1%	15%	24%	<b>309</b>
Western	37%	11%	2%	11%	<1%	14%	25%	<b>241</b>
Prison <sup>6</sup>	14%	46%	0%	11%	0%	3%	26%	<b>35</b>
<b>Total</b>	<b>44%</b>	<b>7%</b>	<b>3%</b>	<b>10%</b>	<b>&lt;1%</b>	<b>13%</b>	<b>23%</b>	<b>2,104</b>

<sup>1</sup> Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at [http://www.mass.gov/dph/aids/research/profile2005/app5\\_hrs\\_maps.pdf](http://www.mass.gov/dph/aids/research/profile2005/app5_hrs_maps.pdf) for configuration of health service regions.

<sup>2</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>3</sup> Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

<sup>4</sup> Includes woman sex with men of unknown HIV status or risk. This category is limited to women.

<sup>5</sup> Includes man sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

<sup>6</sup> HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV/AIDS while in a correctional facility

MSM = Male-to-Male Sex; IDU = Injection Drug Use; MSM/IDU = Male-to-Male Sex and Injection Drug Use; HTSX = Heterosexual Sex; Pres. HTSX = Presumed Heterosexual Sex; Undet. = Undetermined

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/15

**Table 13. Percentage distribution of people living with HIV/AIDS on December 31, 2014 by Health Service Region (HSR)<sup>1</sup> and reported risk: Massachusetts<sup>2</sup>**

HSR	MSM	IDU	MSM/ IDU	HTSX	Other	Pres. HTSX <sup>3</sup>	Undet. <sup>4</sup>	Total
	%	%	%	%	%	%	%	N
Boston	48%	12%	3%	12%	2%	8%	14%	6,236
Central	26%	26%	3%	18%	3%	12%	12%	1,654
Metrowest	42%	10%	3%	13%	2%	11%	18%	2,911
Northeast	33%	15%	3%	16%	2%	12%	20%	3,147
Southeast	40%	19%	3%	15%	2%	8%	13%	2,723
Western	27%	26%	3%	17%	3%	9%	14%	2,143
Prison <sup>5</sup>	7%	66%	8%	6%	<1%	1%	12%	908
<b>Total<sup>6</sup></b>	<b>38%</b>	<b>18%</b>	<b>3%</b>	<b>14%</b>	<b>2%</b>	<b>9%</b>	<b>15%</b>	<b>19,737</b>

<sup>1</sup> Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at [http://www.mass.gov/dph/aids/research/profile2005/app5\\_hrs\\_maps.pdf](http://www.mass.gov/dph/aids/research/profile2005/app5_hrs_maps.pdf) for configuration of health service regions.

<sup>2</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>3</sup> Includes woman sex with men of unknown HIV status or risk. This category is limited to women.

<sup>4</sup> Includes man sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

<sup>5</sup> HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV/AIDS while in a correctional facility. These data do not reflect current incarceration status.

<sup>6</sup> Mass. total includes five persons living with HIV/AIDS with unknown residence at time of report.

MSM = Male-to-Male Sex; IDU = Injection Drug Use; MSM/IDU = Male-to-Male Sex and Injection Drug Use; HTSX = Heterosexual Sex; Pres. HTSX = Presumed Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/15

**Table 14. Ten cities/towns<sup>1</sup> in Massachusetts with the highest proportion of Male-to-Male Sex (MSM) as primary reported risk among HIV infection diagnoses (HIV Dx): 2011–2013<sup>2</sup>**

Rank	City/Town	Number of HIV Dx among MSM	Percent of Total HIV Dx
1	Provincetown	23	88.5%
2	Cambridge	23	60.5%
3	Fall River	15	60.0%
4	Quincy	19	59.4%
5	Boston	293	51.7%
6	Somerville	19	51.4%
7	Medford	10	47.6%
8	Everett	11	45.8%
9	Malden	15	45.5%
10	Framingham	9	39.1%

<sup>1</sup> Among cities/towns with over 20 reported HIV Infection diagnoses in the years 2011–2013. Note: reflects the city/town of a person's residence at the time of report (not necessarily current residence). People diagnosed while at a correctional facility are not included.

<sup>2</sup> Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/15

**Technical Notes:**

Tables 14–17 include trends reported by Massachusetts residents through anonymous telephone interviews from 2001 to 2010 and single year estimates for 2011. Data for 2011 are not included in trend data because new weighting methodology (raking weight) implemented by CDC in 2011 makes this year not comparable with previous years. This ongoing random-digit-dial telephone survey, the Behavioral Risk Factor Surveillance System (BRFSS), covers a broad range of topic areas (including risk related to sexual activity) and is part of a CDC-funded national survey program.

**Table 15. Percent of men ages 18–64<sup>1</sup> years by sex of sexual partner(s) during the past 12 months: Massachusetts, 2001–2010<sup>2</sup>**

Men ages 18–64			
Year	Same-Sex/ Both Sexes	Opposite Sex Only	N
2001	4.3%	95.7%	1,528
2002	8.5%	91.5%	952
2003	7.2%	92.8%	894
2004	9.4%	90.6%	977
2005	4.9%	95.1%	834
2006	5.4%	94.6%	1,217
2007	6.5%	93.6%	841
2008	5.2%	94.8%	1,305
2009	5.9%	94.1%	992
2010	6.1%	93.9%	1,010

<sup>1</sup> Sexually active in past year  
<sup>2</sup> 2011 data are not presented because new weighting methodology (raking weight) implemented by CDC in 2011 makes this year not comparable with previous years.  
 Data Source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS)



**Table 16. Condom use at last sexual encounter<sup>1</sup> among men ages 18–64<sup>2</sup> years reporting same-sex partner (or opposite- and same-sex partners)<sup>3</sup>: Massachusetts, 2001–2010<sup>4</sup>**

Year	Used Condom (%)	Did not Use Condom (%)	Total (N) <sup>5</sup>
2001	37.5%	62.5%	64
2002	46.0%	54.0%	81
2003	39.0%	61.0%	63
2004	41.8%	58.2%	91
2005	55.6%	44.4%	39
2006	46.9%	53.1%	56
2007	31.7%	68.3%	54
2008	34.4%	65.6%	68
2009	31.4%	68.6%	59
2010	44.3%	55.7%	62

<sup>1</sup> Includes oral, vaginal, or anal sex (with either a male or female partner) but not masturbation

<sup>2</sup> Sexually active in past year

<sup>3</sup> During the past 12 months

<sup>4</sup> 2011 data are not presented because new weighting methodology (raking weight) implemented by CDC in 2011 makes this year not comparable with previous years.

<sup>5</sup> Annual number of male respondents reporting same sex partner

Note: Caution should be used in interpreting these results as the effective sample size is small and confidence intervals are wide. There are no significant differences between any years in the percent who used a condom at last intercourse

Data Source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS), 2001–2010

**Table 17. Number of sexual partners in the past year and condom use at last sexual encounter among men ages 18–64<sup>1</sup> reporting same-sex partner (or opposite- and same-sex partners)<sup>2</sup> compared to men reporting only opposite-sex partner<sup>2</sup>: Massachusetts, 2012–2013**

	Men Reporting Same-Sex Partner or Opposite- and Same-Sex Partners	Men Reporting Only Opposite-Sex Partner
Number of Sexual Partners:	% [Confidence Interval]	% [Confidence Interval]
1 partner	60.6 (39.4 – 81.7)	85.8 (82.3 – 89.3)
2 or more partners	39.4 (18.3 – 60.6)	14.2 (10.7 – 17.7)
<b>Total N</b>	<b>86</b>	<b>1,597</b>
Condom Use: <sup>3</sup>	%	%
Yes	39.6 (20.1 – 59.1)	27.3 (23.3 – 31.3)
No	60.4 (40.9 – 79.9)	72.7 (68.7 – 76.7)
<b>Total N</b>	<b>89</b>	<b>1,603</b>
<sup>1</sup> Sexually active in past year <sup>2</sup> During the past 12 months <sup>3</sup> At last sexual intercourse Note: Caution should be used in interpreting these results as the effective sample size is small and confidence intervals are wide. There are no significant differences between any years in the percent who used a condom at last intercourse. Data Source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS), 2012-2013		

**Technical Notes:**

Tables 18–20 include data reported by students in randomly selected Massachusetts public high schools every odd year from 1993 to 2011. This anonymous survey, the Youth Risk Behavior Survey (YRBS), is administered by the Massachusetts Department of Elementary and Secondary Education in collaboration with the Centers for Disease Control and Prevention and focuses on risk behaviors that may affect the health and/or safety of high school students.

**Table 18. Percentage of sexually active male respondents by sex of sexual partner(s) and year: Massachusetts Youth Risk Behavior Survey, 1997–2013<sup>1</sup>**

Year	Same-Sex/ Both Sexes		Opposite-Sex	
	Total N <sup>2</sup>	%	Total N <sup>2</sup>	%
1997	69	6.6%	941	93.4%
1999	89	7.0%	1,169	93.0%
2001	63	5.1%	1,080	94.9%
2003	59	6.1%	931	93.9%
2005	79	8.0%	881	92.0%
2007	70	8.0%	843	92.0%
2009	70	7.5%	802	92.5%
2011	66	7.5%	743	92.5%
2013	48	6.8%	678	93.2%

<sup>1</sup> A random sample of high schools is selected for participation each year, data presented do not represent cohorts followed over time

<sup>2</sup> Total N = total number of respondents by sex of partner (unweighted). The number of respondents for each question varies from year to year

Data Source: Massachusetts Department of Elementary and Secondary Education, Youth Risk Behavior Survey (YRBS), 1997–2013

**Table 19. Sexual behavior as reported among male respondents, Youth Risk Behavior Survey (YRBS): Massachusetts, 2011–2013**

	Sex of Partner			
	Opposite-Sex		Same-Sex/ Both Sexes	
By Behavior:	Total N <sup>2</sup>	% <sup>1</sup>	Total N <sup>2</sup>	% <sup>1</sup>
Ever had sexual intercourse <sup>3</sup>	1,288	75.0	92	75.4
Sexual intercourse before age 13	1,278	8.8	92	14.7
4 or more lifetime sexual intercourse partners	1,278	20.2	91	30.4
4 or more sexual intercourse partners in last 3 months	968	4.8	69	17.2
Alcohol/drugs used at last intercourse <sup>4</sup>	652	28.2	43 <sup>5</sup>	42.4
Condom used at last intercourse <sup>4</sup>	640	66.5	45 <sup>5</sup>	42.1
Ever been diagnosed with any STD	1,404	1.9	113	6.9
Ever injected illegal drugs	1,416	2.1	109	13.5

<sup>1</sup> % = percent of total responding "yes" to specified question

<sup>2</sup> N = total number of respondents (unweighted) by sex of partner for each question. The number of respondents for each question varies because some survey participants do not answer all questions

<sup>3</sup> Among men who reported any sexual contact with opposite sex partner, same sex partner, or both

<sup>4</sup> Among men reporting sexual intercourse in the past three months

<sup>5</sup> This estimate may be unreliable due to a Relative Standard Error of greater than 30% and N < 50, interpret with caution.

Data Source: Massachusetts Department of Elementary and Secondary Education, Youth Risk Behavior Survey (YRBS), 2011-2013

**Table 20. Percentage of Massachusetts Youth Risk Behavior Survey (YRBS) male respondents reporting condom use at last sexual intercourse<sup>1</sup> by year and sex of partner: Massachusetts, 1993–2013**

Year	Opposite-Sex		Same-Sex/ Both Sexes		Total	
	Total N <sup>2</sup>	%	Total N <sup>2</sup>	%	Total N <sup>2</sup>	%
1993	384	58.5%	24 <sup>3</sup>	42.3%	409	57.4%
1995	519	60.3%	28 <sup>3</sup>	40.0%	623	59.9%
1997	480	65.4%	34 <sup>3</sup>	45.5%	517	64.2%
1999	542	64.4%	44 <sup>3</sup>	39.1%	589	62.6%
2001	506	63.6%	27 <sup>3</sup>	18.5%	553	61.6%
2003	395	62.0%	27 <sup>3</sup>	29.6%	424	60.3%
2005	403	72.7%	36 <sup>3</sup>	56.6%	442	71.6%
2007	392	65.0%	27 <sup>3</sup>	38.5%	419	63.4%
2009	367	68.0%	41 <sup>3</sup>	47.0%	409	65.7%
2011	346	65.8%	24 <sup>3</sup>	43.9%	373	64.5%
2013	294	67.3%	21 <sup>3</sup>	40.1%	323	65.2%

<sup>1</sup> Among youth reporting sexual intercourse in the past three months

<sup>2</sup> Total N = total number of respondents by sex of partner (unweighted). The number of respondents for each question varies from year to year.

<sup>3</sup> This estimate may be unreliable due to a Relative Standard Error of greater than 30% and N < 50, interpret with caution.

Data Source: Massachusetts Department of Elementary and Secondary Education, Youth Risk Behavior Survey (YRBS), 1993–2013

**Table 21. Reported infectious syphilis cases that were among men who have sex with men (MSM): Massachusetts, 2004–2013**

Year	Number of Cases among MSM	Total Number of Cases	Proportion of Cases among MSM
2004	152	519	29%
2005	172	407	42%
2006	176	394	45%
2007	200	392	51%
2008	305	366	83%
2009	306	380	81%
2010	384	465	83%
2011	388	500	78%
2012	438	561	78%
2013	536	701	76%

Data Source: MDPH Division of STD Prevention

**Table 22. Reported infectious syphilis cases among men who have sex with men by HIV status and year of diagnosis: Massachusetts, 2004–2013**

Year	HIV-Positive		HIV-Negative/ Unknown Serostatus		Total
	N	%	N	%	N
2004	64	42%	88	58%	152
2005	87	51%	85	49%	172
2006	92	52%	84	48%	176
2007	100	50%	100	50%	200
2008	132	43%	173	57%	305
2009	138	45%	168	55%	306
2010	158	41%	226	59%	384
2011	154	40%	234	60%	388
2012	188	43%	250	57%	438
2013	232	43%	304	57%	536

Data Source: MDPH Division of STD Prevention

**Table 23. Deaths among persons reported with HIV/AIDS by reported risk and year of death: Massachusetts<sup>1</sup>, 2004–2013**

	MSM		IDU		MSM/ IDU		HTSX		Pres. HTSX <sup>2</sup>		Undeter- mined <sup>3</sup>		Total <sup>4</sup>
	N	%	N	%	N	%	N	%	N	%	N	%	N
2004	68	19%	178	50%	17	5%	32	9%	12	3%	40	11%	354
2005	56	17%	171	52%	15	5%	39	12%	18	5%	31	9%	332
2006	63	19%	162	50%	19	6%	32	10%	16	5%	30	9%	324
2007	64	22%	125	44%	26	9%	28	10%	13	5%	25	9%	286
2008	59	21%	127	45%	15	5%	26	9%	11	4%	41	14%	283
2009	45	16%	144	50%	10	3%	36	13%	13	5%	39	14%	288
2010	58	22%	121	46%	14	5%	19	7%	10	4%	38	14%	264
2011	45	20%	98	43%	17	7%	23	10%	9	4%	35	15%	230
2012	52	22%	111	47%	10	4%	24	10%	11	5%	24	10%	236
2013	50	27%	79	42%	7	4%	19	10%	7	4%	23	12%	188

<sup>1</sup> Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>2</sup> Includes woman sex with men of unknown HIV status or risk. This category is limited to women.

<sup>3</sup> Includes man sex with women of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

<sup>4</sup> Totals include pediatric and blood/blood products reported risks

MSM = Male-to-Male Sex; IDU = Injection Drug Use; HTSX = Heterosexual Sex; Pres. HTSX = Presumed Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/15